

REMARKS

This application has been reviewed in light of the Office Action dated October 3, 2003. Claims 1, 2, 6-16, 20-65, and 69-77 are presented for examination, of which Claims 1, 15, 29, 50, and 75 are in independent form. Claims 3-5, 17-19, and 66-68 have been cancelled, without prejudice or disclaimer of the subject matter presented therein, and new Claims 69-77 have been added to provide Applicants with a more complete scope of protection. Claims 1, 2, 6-16, and 20-65 have been amended to define Applicants' invention more clearly. Favorable reconsideration is requested.

Applicants gratefully acknowledge the indication that Claims 4, 5, 18, 19, 29-48, and 50-65 include allowable subject matter would be allowable if rewritten in independent form. Claims 29 and 50 have been amended to be in independent form and therefore are submitted to be in condition for allowance, along with the claims dependent therefrom.

The Office Action states that the Abstract is objected to, "because it has more than one paragraphs and the title is in the abstract." In response, the original Abstract has been replaced with the substitute Abstract on page 3 of the present Amendment. Applicants submit that the informalities in the original Abstract have been corrected and therefore respectfully request withdrawal of the objection.

The Office Action states that Claim 49 is objected to for certain informalities. Applicants submit that the informalities noted in section 3 have been corrected in the present Amendment. Therefore, withdrawal of the objection is respectfully requested.

The Office Action states that Claims 1-68 are rejected under 35 U.S.C. § 112,

second paragraph, as being indefinite. Cancellation of Claims 3-5, 17-19, and 66-68 renders their rejections moot. Applicants have reviewed and amended Claims 1, 2, 6-16, and 20-65, as deemed necessary, with special attention to the points raised in section 5 of the Office Action. Applicants submit that the amended claims are sufficiently definite and therefore respectfully request withdrawal of the rejections under the second paragraph of § 112.

The Office Action states that Claims 1, 6-15, 20-28, and 49 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,636,032 (Springett); that Claims 2, 3, 16, and 17 are rejected under § 103(a) as being unpatentable over Springett in view of U.S. Patent No. 5,729,351 (Oh); and that Claims 66-68 are rejected under § 103(a) as being unpatentable over Springett in view of "well-known prior art."

Cancellation of Claims 3-5, 17-19, and 66-68 renders their rejections moot. Applicants submit that independent Claims 1, 15, and 75, together with the claims dependent therefrom, are patentably distinct from the cited prior art for at least the following reasons.

According to aspects of the present invention, as set forth in the claims, a table is created for a document to be printed. The table describes at least part of a monochromatic component of a band of the document. Each cell of the table represents at least a pixel. A number of pixels to be printed (i.e., a number of switched-on pixels) is counted and a quantity of printing product necessary for printing the document is calculated based upon the number of switched-on pixels.

Representing the monochromatic component in the form of pixels may require a large memory capacity (see p. 5, lines 14-16, of the specification). In order to reduce the

memory capacity required for such a representation, the table that is created is a table of limited capacity, which describes a monochromatic component of adjacent bands of the document (see p. 5, lines 24-25).

That is, a document to be printed is divided into at least one page (see p. 13, lines 22-24). Each page is divided into wider bands by a broadened band divider, wherein a wider band is a band of a page under consideration increased by an overlap margin belonging to a following or adjacent band (see p. 13, lines 26-27). A table of limited capacity is created for each monochromatic component of a wider band, and the number of switched-on pixels for the wider band is calculated based upon the table (see p. 15, line 26, to p. 16, line 9).

Springett relates to a system for informing a user of a current status of an amount of marking material in a printing system. As understood by Applicants, Springett discloses a way to predict the number of pages that may be printed with the ink remaining in an ink cartridge before the cartridge will need replacing. The prediction is calculated according to the average area of each page, the number of jobs, and the average coverage area over each page since the cartridge was first used. Coverage areas are calculated according to the amount of ink to be utilized in rendering a document. The number of pixels to be rendered when printing a page or a job is used to determine the amount of ink to be used.

Nothing has been found in Springett that is believed to teach or suggest a method of predicting a quantity of a printing product necessary for printing a document, wherein the method includes "dividing each page of the document into bands of the digital data," and "creating, from the digital data, a table (T) of limited capacity describing at least part of a

monochromatic component of one of the bands, with the monochromatic component corresponding to the printing product and each cell of the table representing at least a pixel," as recited in Claim 1.

Applicants submit that Springett does not recognize that representing a monochromatic component of a band of a document in the form of pixels may require a large memory capacity, as discussed above. Therefore, Springett fails to disclose or suggest the use of a table of limited capacity to describe the monochromatic component. As explained above, a table of limited capacity reduces the memory capacity required for such a representation by describing a band that is increased by an overlap margin belonging to a following or adjacent band.

Accordingly, Applicants submit that Claim 1 is not anticipated by Springett and respectfully request withdrawal of the rejection under 35 U.S.C. § 102(b). Independent Claims 15 and 75 include a feature similar to that discussed above, in which a table of limited capacity is created that describes at least part of a monochromatic component of a band of a document. Therefore, those claims also are believed to be patentable for at least the above reasons.

Oh is understood to relate to a system for generating and displaying a number of printed sheets and a print ratio occupied by black pixels on a print sheet. The print ratio is determined from a number of black pixels in image data to be printed. A print control unit counts the number of black pixels in the image data per page. Nothing in Oh is seen to remedy the deficiencies of Springett. Therefore, Applicants submit that independent Claims 1, 15, and

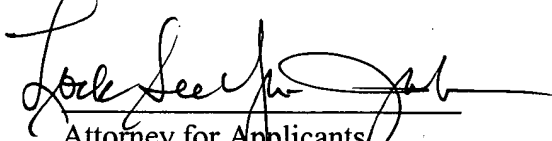
75 are patentable over Springett and Oh, considered individually or in combination.

The other unallowed claims in this application depend from one or another of the independent claims discussed above, and therefore are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual consideration or reconsideration, as the case may be, of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,


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